The Cost of a Bad Reputation: The MV-22 in Perspective

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The Marine Corps has a legacy of innovation. It is constantly striving to transform itself to meet the challenges of an ever changing environment of chaos and uncertainty. According to General Hagee, "to prevail in tomorrow's battlefield, we must continue to intelligently implement new concepts, employ new organizational tools, and field modern weapons and systems."[1] As the Marine Corps faces today's challenges and anticipates the unknown challenges of tomorrow, the doctrine of expeditionary maneuver warfare will drive the fielding of revolutionary assault support aircraft. While the Marine Corps can adapt available technology to fit existing doctrine, research and development is necessary to meet the unique needs of today's asymmetrical battlefield. Despite problems in development, the MV-22 Osprey presents a transformational shift in assault support resulting in a remarkable increase in capability over existing legacy aircraft.

Put into Perspective

This aircraft is certainly qualified and has been the Marine Corps' number one aviation acquisition priority for over a decade. Nevertheless, many have asked why the MV-22 has had difficultly in achieving operational success. Conversely, one should ask what the MV-22 has to offer the Marine Corps. According to the flight test director for the MV-22 program, the

[1] U.S. Dept of Navy, USMC, *Concepts and Programs*, 2004 (Washington, D.C.:GPO, 2004), ii.

Osprey is, “a very capable medium-lift military transport aircraft the Marine Corps has needed for a long time.”[2] Its specifications detail an aircraft capable of carrying twenty-four combat equipped Marines or a 10,000-pound external load, coupled with the ability to strategically self-deploy 2,100 nautical miles with a single aerial refueling. The MV-22 will continue to ensure Marines will be "first to fight".

However, many politicians and public opponents have tried to cancel the MV-22 on multiple occasions. The MV-22 and tiltrotor technology can trace their beginnings to the 1950s, the same era as the emergence of the tactical jet. Just as critics incorrectly thought jets would be a disastrous undertaking, so too is the MV-22 fighting similar opposition. However, “History has shown that controversial military aircraft can survive and later excel in the combat arena.”[3] In a similar manner, the F4 Corsair presented numerous problems early in its existence. Despite this fact, “No one would now criticize the impressive combat record accrued by the Corsair in the Pacific during World War II.”[4]

The MV-22 is the only practical alternative that meets the tri-service requirements of the Marine Corps, Air Force, and

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[2] LtCol Kevin Gross, “Dispelling the Myth of the MV-22,” *Proceedings*, online ed., September 2004, URL:< www.military.com/NewContent/0,13190,NI_Myth_0904,00.html>, accessed 22 November 2004.

[3] Zell Miller, “Stay the Course on the Osprey.” *The Augusta Chronicle*, online ed., 23 March 2001, URL:< www.augustachronicle.com/stories/032301/opi_0467189.shtml>, accessed 27 December 2004.

[4] Miller, “Stay the Course,” 23 March 2001.

Navy by providing unrivaled operational reach and tactical awareness for the MAGTF or combatant commander.[5] Admittedly, there are other aircraft in the Department of Defense's inventory that are capable of conducting an assault support mission; the H-60 Blackhawk and its variants have often been called the logical replacement for the CH-46. To incorporate the H-60 into the Marine Corps' arsenal of assault support aircraft it would take millions of dollars and several years to adequately train and equip deploying squadrons. At the same time, when comparing the H-60 to the MV-22, the H-60 would generate a gap in fulfilling the doctrine of expeditionary maneuver warfare. General James L. Jones states that these "options are accurately described as a step back."[6]

Historical Data

The MV-22 is certainly not the only aircraft whose safety record has undergone scrutiny and challenge. The inherent danger of flying military aircraft is a known fact. Accordingly, the MV-22's safety record deserves to be compared to that of other aircraft. The comparisons will show they all have one thing in common; mishaps. A mishap is defined as an unplanned event or series of events directly involving a

[5] LtGen Michael Hough, "The State of Marine Aviation," *Marine Corps Gazette* Vol.87, Iss. 5 (May 2003): 22, http:search.proquest.com.

[6] U.S. Congress, House, Committee on Armed Services, Military Procurement Subcommittee, *V-22 Osprey Program*, Hearings, Statement of General James L. Jones, 107th Cong., 1st sess., 1 May 2001. H.A.S.C. 107-14, URL:<http://www.house.gov/hasc/opening statementsand pressreleases/107thcongress/01-05-01jones.html>, accessed 7 December 2004.

Department of Defense aircraft that results in damage to the DoD aircraft and/or damage to any property, and/or injury. Informational data provided to the House of Representatives Committee on Armed Services concerning aircraft mishaps supports the following facts.

In the first five years of evaluation or operational employment, the CH-46 suffered forty-four mishaps; the H-3, 28; the H-6, 20.[7] This does not mean that helicopters are the only aircraft to have mishaps. The F-16 had three; the F-14, twenty-seven; the A-7, 155; the F-8, 288 mishaps.[8] These numbers were for only five years and could have given cause to challenge the validity of any one of these aircraft. Even so, the government awarded contracts to military industrial giants like Boeing, Sikorsky, Grumman, McDonnell Douglas, and General Dynamics even if their products continually crashed. However, and more importantly, despite the number of mishaps, these aircraft contribute[ed] to the United States and its accomplishment of national military policy. Pilots and crewmembers went through rigorous testing and real-world operations to define each aircraft's specific flight envelope and tolerances. These projects were not cut but modified to allow for adjusted training, evolving flight procedures, and maintenance practices

[7] U.S. Congress, House, Committee on Armed Services, *National Defense Authorization Act for Fiscal Year 2002 and Oversight of Previously Authorized Programs,* Hearings, 107th Cong., 1st sess., 21 May 2001, H.R. 2586, URL;< http://commdocs.house.gov/committees/security/has141030.000/has141030_0.htm>, accessed 28 November 2004. Cited hereafter as U.S. Congress, House, *Defense Authorization Act for Fiscal Year 2002*, 21 May 2001.
[8] U.S. Congress, House, *Defense Authorization Act for Fiscal Year 2002*, 21 May 2001.

that carried over to operational success. The MV-22 program deserves no less.

MV-22 Mishaps

Unfortunately, in a similar manner as other "transformational" aircraft, the MV-22 has had four mishaps which cost the lives of thirty Marines and Sailors. While understanding "the tragic consequences of these mishaps, it is also important to recognize that they were not the result of any failure of tiltrotor technology."[9] The MV-22 mishaps covered a period of ten years, and the mishap investigations concluded that all were the result of different factors.[10] The last mishap occurred on December 11, 2000; the Marine Corps then delayed full rate production of the aircraft in order to establish the cause of the crash and verify the MV-22's expectation as its next preeminent assault support aircraft. It is imperative not to lose sight of the reality that any time a new aircraft is introduced, it brings with it a multitude of "unknown unknowns."[11] All aircraft must be tested, and they require full and fair evaluations before the final decision is made.

The MV-22 was grounded for over seventeen months due to the December 2000 mishap. This grounding was due to two fatal

[9] U.S. Congress, House, Committee on Armed Services, Military Procurement Subcommittee, *V-22 Osprey Program*, Hearings, 107th Cong., 1st sess., 1 May 2001. H.A.S.C. 107-14, URL:<http://commdocs.house.gov/committees/security/has12100.000/has121200_0htm>, accessed 28 November 2004. Cited hereafter as U.S. Congress, *V-22 Osprey Program*, 1 May 2001.
[10] U.S. Congress, *V-22 Osprey Program*, 1 May 2001.
[11] Anonymous, "Return of the Osprey," *Marine Corps Gazette* Vol.86, Iss. 5 (2002): 26, http:search.proquest.com.

crashes occurring within eight months of each other, but this also allowed for a leap in the MV-22 developmental process. Planned modifications and improvements not originally forecast for several years have been incorporated into the MV-22 resulting in a more mature aircraft being re-introduced to the military.[12] At the same time, the program was redesigned, allowing for event versus time-driven testing to be used as the benchmark for moving the program forward. This operational pause, while tragic and unfortunate in its origin, generated invaluable time for reevaluation and focus.

The Cost of Transformational Technology

In order to project its global power on an ever-changing enemy, the United States requires emerging military technology to be adaptable and supportable. "Maintaining our technological edge over future adversaries is fundamental to our success – the MV-22 significantly contributes to this requirement."[13] By comparison, there is no better example of contested technology, or unprecedented multi-billion dollar spending, than the F-117 Stealth Fighter. The F-117's troubled infancy was veiled in secrecy, but it now has a proven military service record. "Before the program was declassified in 1988, three of these aircraft had crashed. An additional three more crashed before

[12] Anonymous, "Return of the Osprey".
[13] U.S. Congress, *V-22 Osprey Program*, 1 May 2001.

1997."[14] Despite these accidents, the unparalleled capability of the F-117 is unquestioned by military and aerospace experts throughout the world.

This begs the question: what if the F-117 were developed and tested in broad vision of the American public? No one can say for certain, but it is plausible that public criticism and open skepticism could have prevented this aircraft from being fielded, let alone placed on the forefront of our nation's defense. Perhaps the MV-22 will test the limits of public scrutiny and lay to rest the questions regarding its existence, let alone relevancy. Lieutenant General Hanlon states that "transformation must then produce either the ability to do something previously unachievable or the ability to perform a function exponentially better then before."[15] This is exactly what the MV-22 offers, but done openly and in full view of the American public. This aircraft has been subject to many of the same arguments of transformational technology that the F-117 fought successfully: high costs, peculiar looking, and "risky technology" that is not fully developed.

Catch-22

Concurrent to the operational testing and evaluation of the

[14] U.S. Congress, *V-22 Osprey Program*, 1 May 2001.

[15] Statement by LtGen Edward Hanlon Jr., Committee on Armed Services, Subcommittee on Terrorism, Unconventional Threats and Capabilities, regarding transformation, 26 February 2004, URL:< www.house.gov/hasc/openingstatementsandpressreleases/108thcongress/04-02-26hanlon.html>, accessed 7 December 2004.

MV-22, the Marine Corps continues to fly the CH-46 and the CH-53D. So too is the CH-46 subject to mishaps; "but when a CH-46 crash in December 1998 killed six Marines and one Sailor, there were no ringing editorials calling for the aircraft to be grounded before it kills again."[16] With almost forty years of faithful service as the backbone of Marine Corps assault support, the CH-46 has taken an inferior position to the CH-53E in the troop transport role. Only when the MV-22 is introduced to the operational fleet will it generate a shift in the medium lift assault support missions that the larger CH-53E has had to bridge in the waning years of the CH-46.[17]

All concerned should be troubled about mishaps surrounding new aircraft and the unfortunate loss of life. For this very reason, the MV-22 must be subjectively compared to the CH-46; "since the introduction of the CH-46, 166 have been destroyed in accidents, with a loss of 345 Marines. . . . Since the CH-53, ninety-three have crashed, with a loss of 302 Marines."[18] When critics fully realize the advanced capabilities and associated technological innovations of the MV-22, its developmental track record will prove that it is "not very different than other

[16] John R. Guardiano, "Defense: Catch-22 for the V-22," *Rotor & Wing*, online ed., February 2001, URL:< www.aviationtoday.com/cgi/rw/show_mag.cgi?pub=rw&mon=0201&file=0201defense.htm>, accessed 29 November 2004.
[17] LtGen Michael Hough, "The State of Marine Aviation," *Marine Corps Gazette* Vol.87, Iss. 5 (2003): 22, http:search.proquest.com.
[18] U.S. Congress, House, *Defense Authorization Act for Fiscal Year 2002*, 21 May 2001.

rotary-wing and some fixed-wing aircraft that introduced new technology."[19]

What the Future Holds

In an environment in which our adversaries grow bolder by the day, the challenge of modernizing our assault support aircraft is readily apparent. For the "cost" of one MV-22, the Marine Corps can replace two legacy aircraft. The CH-46 and the CH-53D, which entered their service life in the mid-1960s, are "experiencing escalating maintenance costs; reduced reliability, availability, and maintainability; and significant performance degradation."[20]

While the Marine Corps continues to track its enemies around the globe, it should not be boasting about the marvels of deploying forces through arduous terrain but vocalizing the urgent and immediate necessity of the MV-22. The CH-46 is not capable of delivering as many Marines into battle as it once did. It can not lift as much as it once did. The CH-53D was also introduced in the 1960s to replace the CH-53A model. However, the Delta model cannot refuel in flight and cannot carry the loads of the CH-53E. The challenges of making aircrews do more with less are beginning to take on a level of absurdity.

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[19] Executive Decision Making 13–7

[20] U.S. Congress, House, *Defense Authorization Act for Fiscal Year 2002*, 21 May 2001, statement of Vice Admiral Joseph W. Dyer, URL:<www.house.gov/hasc/openingstatementsandpressreleases/107thcongress/01-05-21dyer.html>, accessed 8 January 2005.

Furthermore, the capability of the MV-22 to carry twenty-four combat-loaded troops, deploy a distance of 2,100 miles on one aerial refueling, and achieve speeds in excess of 230 knots is a monumental increase over the CH-46 and CH-53D. The MV-22 is an expensive undertaking, but it possesses the ability to accomplish a more efficient mission with fewer aircraft and personnel than the current operational legacy helicopters. According to the chief of operational testing and development, VMX-22, when one compares the MV-22 to the aging helicopters, "it's three times as fast, has four times the payload and four times the range. It is better than any other assault support aircraft in the world."[21]

In conclusion, the MV-22 has amazing potential, which can not be overshadowed by prior mishaps. It represents the next generation of Marine Corps dominance in assault support. The only certain fact is that there will be a continued demand on aircraft capable of delivering combat ready Marines and equipment to austere locations in the foreseeable future. The Marine Corps is fulfilling Gen Hagee's mandate to prevail in tomorrow's battlefield, even if risk accompanies the progress.

[21] Sgt J. L. Zimmer III, "Osprey makes surprise visit to Miramar," *Marine Corps News*, online ed, URL:<www.usmc.mil/marinelink/mcn2000.nsf/0/E2A63FAC39BD384D85256F1E0002150...>, accessed 8 January 2005.

Anonymous. “Return of the Osprey,” *Marine Corps Gazette* Vol.86, Iss. 5 (2002): 26-28. http:search.proquest.com.

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U.S. Dept of the Navy, USMC, *Concepts and Issues 2004* (Washington, D.C.:GPO, 2004), ii.